BIG CYPRESS BASIN

OUR MISSION ELEMENTS

FLOOD CONTROL | NATURAL SYSTEMS | WATER QUALITY | WATER SUPPLY

BIG CYPRESS BASIN BOARD MEMBERS

Rick Barber (Chairperson)
David Farmer
John Vaughn
Alice J. Carlson
Ralph Haskins

BIG CYPRESS BASIN CONTACTS

Lisa Koehler
Administrator- BCB

Ananta Nath, P.E., D.WRE
Principal Engineer

Chris Doherty
Director of Field Operations

sfwmd.gov

South Florida Water Management District
Big Cypress Basin
2660 Horseshoe Dr. N.
Naples, Florida 34104
239-263-7615
www.sfwmd.gov

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

BIG CYPRESS BASIN

Golden Gate Main Weir #1

OPERATION SCHEDULE OF WATER CONTROL STRUCTURES

MAY 2013

INTRODUCTION

The Big Cypress Basin presently operates a network of 162 miles of primary canals, 46 water control structures and four pumps to provide flood control during the wet season and to protect the water supplies and environmental resources from overdrainage of fresh water during the dry season (Map 1).

The resource protection objectives include prevention of saltwater intrusion into freshwater supplies, recharging of the public water supply wellfields, and protection and enhancement of the regional ecosystem functions.

These objectives are achieved through scheduled operations of the water control structures to accommodate quick removal of runoff during the wet season and partial or full closure of the gates during the dry season.

The schedule must have the flexibility to address the difficult balancing act of the transition from wet to dry season and, likewise, from dry to wet season, as well as anticipate and prepare for major storm or drought events.

To optimize the system, it is essential to constantly collect and analyze surfacewater and groundwater conditions, land development patterns, and rainfall data (rainfall intensity varies throughout the Basin).

Due to the many variables affecting the operation of the structures, such as the location of the structure, size of drainage area, adjacent land use, inflow from secondary drainage system, and gate operating mechanism, a single set of criteria does not work for the entire Basin. The criteria and schedule furnished here should not be considered fixed, but a guide, as we continue to monitor the performance of the gate operations and make improvements for more efficient water management.

***RECHARGE* – Water seepage through the ground to rejuvenate underground aquifers.**

***SALTWATER INTRUSION* – The nearly irreversible process where the natural saltwater interface moves inland, usually as a result of reduction of freshwater head caused by overdrainage, insufficient recharge, drawdown by well pumpage, or large storm surge.**

***SECONDARY CANAL SYSTEM* – Canal systems providing drainage to several individual users on a local scale. The secondary system ultimately drains into the primary canals. In Collier County, this system is operated by Collier County Stormwater Management Department.**

***SPILLWAY* – A special water control structure designed to efficiently and carefully convey flood discharges that are not normally handled through regular outlets. The spillway also acts as a barrier to prevent overdrainage during the dry season.**

***WATER CONTROL STRUCTURE* – Any man-made feature used to control water elevation and/or flow.**

***WATER MANAGEMENT DISTRICT* – One of five quasi-state governmental entities created in 1972 by the Florida State Legislature to serve Florida's demanding and diverse water needs.**

***WEIR* – A small dam in a canal, usually with a specially shaped crest (top) to enable water to move more freely over the top.**

***WEIR CREST* – The highest elevation on a weir, above which water begins to flow over.**

***WELLFIELD* – In reference to underground water supply wells, that area that is influenced by a group of wells and their pumpage.**

***WET SEASON* – The time beginning in June and ending in October characterized by late afternoon thundershowers and tropical weather activities (nearly 80% of the annual rainfall total).**

GLOSSARY

AMIL GATE **– An automated gate which maintains a constant upstream water elevation.**

AVERAGE ANNUAL RAINFALL **– The average (mean) annual rainfall for Collier County is approximately 53 inches per year with historic variability from an annual low of 30 inches to a high in excess of 83 inches.**

AQUIFER **– A layer of underground permeable rock, sand or gravel which is saturated with water.**

BIG CYPRESS BASIN(BCB) **– One of two administrative units in the South Florida Water Management District with its own Governing Board, encompassing all of Collier County and part of Monroe County whose purpose is to provide flood control, enhance water supply, and protect water quality and the environment.**

DRY SEASON **– The time generally beginning in October and ending May characterized by less rainfall (approximately 20% of annual rainfall total).**

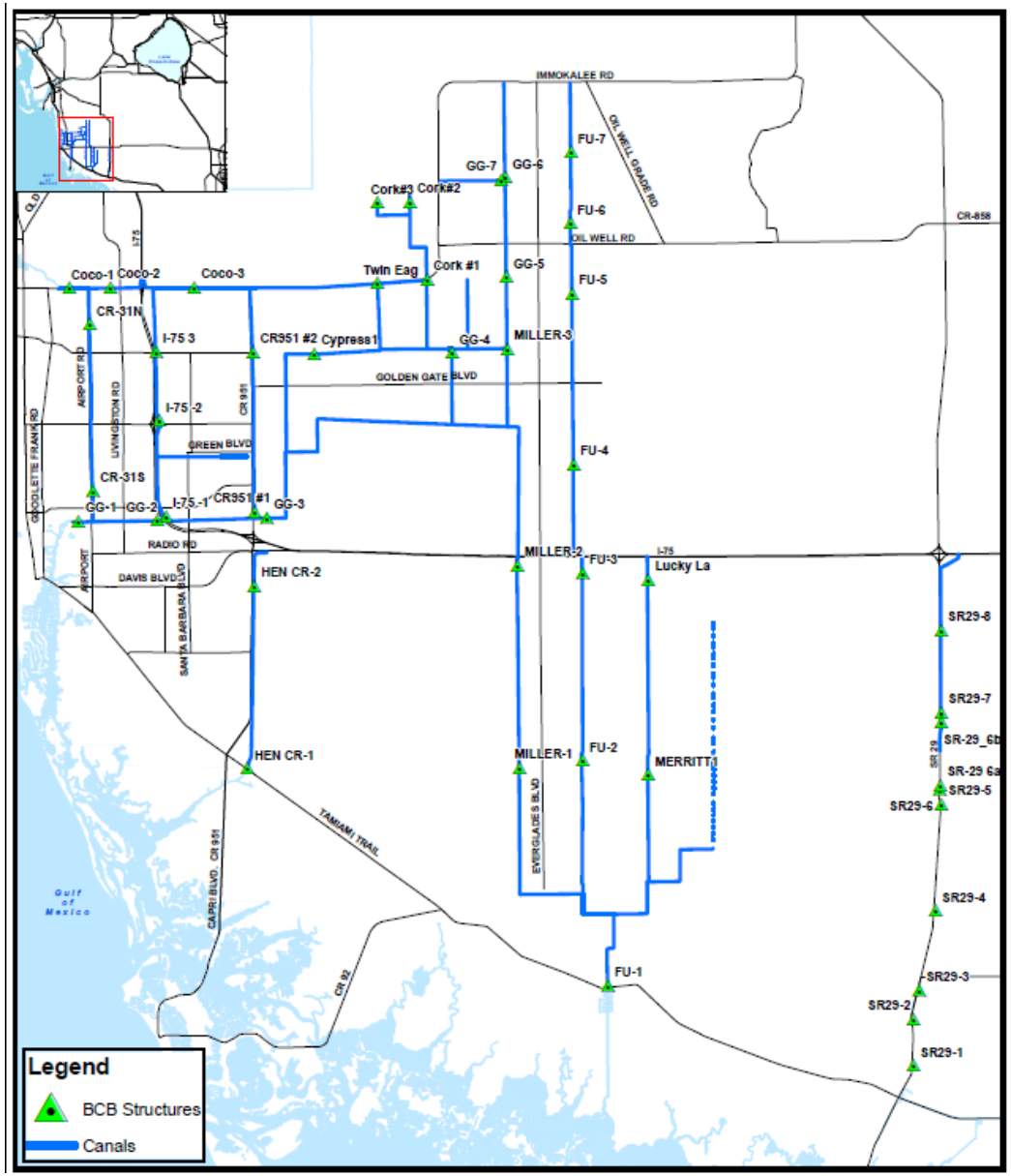
GATE **– A component of a water control structure that has the flexibility to remain closed during dry weather to help maintain a desired groundwater table and can be opened to release water during wet weather.**

NGVD/NAVD - Abbreviations for "National Geodetic Vertical Datum" of 1929, and "North American Vertical Datum" of 1988 respectively. These are datum or references for measuring elevation of land or water surface, similar to mean sea level datum used in the past. For the Big Cypress Basin area, NAVD elevations in feet are obtained by subtracting 1.3 ft. from the corresponding NGVD elevations.

OBERMYER GATED SPILLWAY **- A spillway consisting of steel gate panels, the operation heights of which are controlled by inflatable air bladders.**

PRIMARY CANAL SYSTEM **– Canal systems that are the primary drainage component on a regional scale, acting as outfall from secondary canals. In Collier County, these are operated by BCB.**

Map 1



BASIC OPERATING SCHEDULE OF THE BIG CYPRESS BASIN WATER CONTROL STRUCTURE

SERIAL #	STRUCTURE	TYPE	WEIR CREST ELEVATION	OPERATING ELEVATIONS			
				WET SEASON		DRY SEASON	
				OPEN AT	CLOSE AT	OPEN AT	CLOSE AT
1	Golden Gate Canal Weir #1	Hinged Crest Gated Weir	5.00 / -1.00	4.00	3.00	5.00	4.00
2	Golden Gate Canal Weir #2	Obermeyer Gated Spillway	6.30/0.00	6.00	5.00	6.50	5.75
3	Golden Gate Canal Weir #3	Obermeyer Gated Spillway	9.00 / 1.00	8.00	7.20	9.20	8.50
4	Golden Gate Canal Weir #4	Fixed Crest with 2 Gates	9.50	10.00	9.50	10.50	9.75
5	Golden Gate Canal Weir #5	Fixed Crest with 2 Gates	10.50	11.00	10.50	11.50	10.75
6	Golden Gate Canal Weir #6	Fixed Crest with Single Leaf Gate	16.50	16.50	14.80	16.80	16.00
7	Golden Gate Canal Weir #7	Fixed Crest with Single Leaf Gate	14.80	14.80	13.40	15.80	14.80
8	I-75 Canal Weir #1	Fixed Crest with 1 Gate	6.20	6.70	6.20	7.20	6.45
9	I-75 Canal Weir #2	Fixed Crest with 2 Gates	8.00	8.50	8.00	9.00	8.25
10	I-75 Canal Weir #3	Double Box Culvert with 2 Gates	9.50	10.00	9.00	11.00	9.50
11	Cypress Canal Weir 4A-1	Fixed Crest with 2 Gates	9.50	10.00	9.50	10.50	9.75
12	Airport Road Canal North	Amil Gate	8.50	7.50	----	8.50	----
13	Airport Road Canal South	Amil Gate	8.50	7.50	----	8.50	----
14	Faka Union Canal Weir #1	Fixed Crest	2.00	----	----	----	----
15	Faka Union Canal Weir #2	Fixed Crest with Steel Gates	3.87	----	----	----	----
16	Faka Union Canal Weir #3	Fixed Crest with V-Notch	6.20	6.70	6.20	7.20	6.45
17	Faka Union Canal Weir #4	Gated Spillway	12.50	12.00	10.50	12.50	11.00
18	Faka Union Canal Weir #5	Sheet Pile Weir with 12 Gates	11.00	13.50	12.50	14.50	13.50
19	Faka Union Canal Weir #6	Fixed Crest with V-Notch	14.50	15.00	14.50	15.50	14.75
20	Faka Union Canal Weir #7	Fixed Crest with V-Notch	16.70	16.70	15.70	17.20	16.70
21	Miller Canal Weir #1	Fixed Crest with Steel Gates	4.15	5.00	4.00	5.00	4.50
22	Miller Canal Weir #2	Fixed Crest with V-Notch	6.20	6.70	6.20	7.20	6.45
23	Miller Canal Weir #3	Fixed Crest with V-Notch	10.50	10.50	9.50	10.50	10.00
24	Lucky Lake Weir	Fixed Crest with 8 Steel Gates	4.50	7.00	6.50	9.80	9.30
25	Merritt Canal Weir #1	Adjustable Concrete Block Stop Logs	9.02	----	----	----	----
26	Henderson Creek Weir #1	Gated Spillway	5.00	5.50	4.00	6.50	5.50
		Flap Gate	0.50	5.75	5.50	5.75	5.50
		East Side Channel	3.52	5.00	4.00	6.00	5.50
27	Henderson Creek Weir #2	Gated Spillway	10.00	10.00	8.00	11.00	9.50
28	Cocohatchee Canal Weir #1	Gated Spillway	6.50	6.70	4.00	6.70	5.20
29	Cocohatchee Canal Weir #2	Gated Spillway	10.00	10.20	8.00	10.20	8.70
30	Cocohatchee Canal Weir #3	Gated Spillway	12.00	11.50	10.00	11.80	10.80
31	S.R. 29 Canal Weir #1	Fixed Crest with Removable Steel Sheets	3.22 **	2.72	1.22	3.22	2.22
32	S.R. 29 Canal Weir #2	Fixed Crest with Removable Steel Sheets	3.56 **	3.06	1.56	3.56	2.56
33	S.R. 29 Canal Weir #3	Fixed Crest with Removable Steel Sheets	5.51 **	4.91	3.41	5.51	4.51
34	S.R. 29 Canal Weir #4	Fixed Crest with Removable Steel Sheets	8.08 **	7.58	6.08	8.08	7.08
35	S.R. 29 Canal Weir #5	Fixed Crest with Removable Steel Sheets	11.22 **	10.72	9.22	11.22	10.22
36	S.R. 29 Canal Weir #6	**NOT IN SERVICE**					
37	S.R. 29 Canal Weir #6A	Gated Weir	11.13	10.63	9.13	11.13	10.63
38	S.R. 29 Canal Weir #6B	Gated Weir	11.14	10.64	9.54	11.14	10.64
39	S.R. 29 Canal Weir #7	Fixed Crest with Removable Steel Sheets	11.14 **	10.64	9.14	11.14	10.14
40	S.R. 29 Canal Weir #8	Fixed Crest with Removable Steel Sheets	12.57 **	12.07	10.57	12.57	11.57
41	Corkscrew Canal #1	Double Box Culvert with 2 Gates	14.50*	11.00	9.00	12.50	11.50
42	Corkscrew Canal #2	2 – 10’ X 10’ Gated Box Culverts	15.50*	11.50	10.00	12.50	11.50
43	Corkscrew Canal #3	1 - 48 inch Culvert with Slide Gate	15.30*	12.50	11.00	13.50	12.50
44	Twin Eagles	Gated Spillway	14.50	12.50	11.00	13.50	12.50
45	CR951-1	Double Box Culvert with 2 Gates	12.00*	8.00	7.00	9.00	8.00
46	CR951-2	Double Box Culvert with 2 Gates	12.00**	12.00	10.00	12.50	10.50

- Top of culvert** * - Elevation of top of concrete headwall, not weir crest** **11/2011** **All elevations are in NGVD 29**